E UNIVERSITY OF CHICAGO

Round Table

WHAT SHOULD SOCIETY EXPECT FROM A UNIVERSITY?

An NBC Radio Discussion by

LAIRD BELL, ARTHUR HOLLY COMPTON

and RALPH TYLER

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A SENSE OF THE FUTURE

By J. BRONOWSKI

NUMBER 574 * MARCH 20, 1949 * *10 cents*

Yearly subscription $3.00

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785TH BROADCAST IN COOPERATION WITH
THE NATIONAL BROADCASTING COMPANY

The University of Chicago ROUND TABLE. *Published weekly. 10 cents a copy; full-year subscription, 52 issues, three dollars. Published by the University of Chicago, Chicago 37, Illinois. Entered as second-class matter January 3, 1939, at the post office at Chicago, Illinois, under the Act of March 3, 1879.*

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What Should Society Expect from a University?

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MR. TYLER: In these unquiet times, people hardly know what to expect of anyone or anybody. The universities seem to be a curious mixture of help and irritation. We turn to them to educate our youth and to give us new knowledge, but many people are disturbed by their irritating interest in matters which may rock the boat on which we travel through the troubled seas.

Universities have grown to be big business. Are they worth the cost? Do they do the job we need done? Bell, what should a society expect of universities?

MR. BELL: You seem to be making me the representative of society here, and for the moment I will accept that assignment. I think that my concern, as society, is that a university really does render the service which society expects. There are three particular points on which I think we, as society, would like to be enlightened. One is: What is the practical use of the kind of research in the physical and biological sciences which universities do? Another is: What is the use of social science, as it is called? And, finally: What part do the humanities play in the picture, if any?

Mr. Compton is perhaps qualified to speak on that first question.

MR. COMPTON: You remember the couplet:

> The college professor, you think, is a dreamer,
> Just see the shellacking they gave Hiroshima'r.

That comment brings into the picture at once the fact that some of this strange erudite research which goes on in the universities is itself of practical importance. I happened rather recently to be on a panel which was concerned with the discussion of inventions and patents; and they asked me what was the role of universities in that kind of research—the kind of research which led toward inventions. The best answer which I could

give was to report some of my own experience in that regard, as I was, at one time, in the research laboratory of the Westinghouse Company. I remember the time when from the universities there came a paper on the spectrum of sodium vapor. Within about two weeks of each other, research men in the laboratories of the General Electric Company and the Westinghouse Company reported into the patent office inventions of a sodium tube light, based on the research which was done in some university on sodium vapor. Of course, that was not all that was necessary. The industrial laboratories had to carry on research on a glass which would contain the sodium vapor. When that was done, they had a practical result.

That is an example of where the universities and the industrial laboratories work together on such practical inventions.

MR. TYLER: Do the universities contribute to our development in medical sciences as well?

MR. COMPTON: I would say that the work which leads to medical advances is done to a very large extent in the universities.

MR. TYLER: What would be some illustrations of that?

MR. COMPTON: For example, you have the discoveries which have been recently made in connection with hormones, vitamins, viruses, enzymes, and things of that kind. These are the discoveries of the kind which have made all the difference between enabling the doctors to cure disease and only making the patients comfortable; and they have increased the life of our citizens gradually from thirty to forty to sixty years.

MR. BELL: Is the race of scientists dying out, practical scientists?

MR. COMPTON: I would say that the universities are doing very much in training men. One of the rather important aspects of the universities is this research task, as compared with industry. And you have to train research men. A part of that training—the essential first part—is done in the universities. The industries take men and fit them to their needs. But they cannot give them the initial training. The universities have to give that fundamental, basic background of the understanding of science.

MR. TYLER: As I see your distinction, Compton, you are pointing out that the universities train the scientists, giving them their first, basic

aining; and then they may go on to get special technical training in ıdustry or government or elsewhere. Is that correct?

MR. COMPTON: Of course, I would say that likewise the universities ırry on specialized research as well, but they do it in the field directed ›ward the understanding of the world. The industries and the govern-ıent do it more for applied purposes.

MR. TYLER: Are the universities not concerned with a lot of useless ıowledge as well as useful knowledge?

MR. BELL: After all, I, as a representative of business, think that there probably nothing worse than something theoretical.

MR. COMPTON: Do you really think that? You know, I came to the ıiversity from the industrial laboratory because I was concerned with ıch things as cosmic rays and atoms. It was hard to find a place in indus-y where those could be studied, because it was hard to justify them as ›ofit-making. But in a university it was the kind of thing that was ıtural. It was understanding the basic principles of the world. But let s see what happened from that. The study of the atoms was a part of ıe background which led to the discovery of uranium fission and of ›mic energy. The techniques which were used for investigating cos-ic rays were techniques that, when they were learned, gave the means developing radar and a host of other instruments for winning the ar. That is the kind of thing which results in showing that the knowl-lge that you have is not useless; that even though you may get it for ıeoretical purposes, eventually it is frequently the most useful kind of ıowledge which you can get.

MR. TYLER: You know, I have an interesting illustration of that in our ivision of the Social Sciences. A research man was interested primarily the question of what happens to brain tissue when people get angry. nd he started working first with monkeys to find out what happens to ain tissue as monkeys get angry; and it now appears that this kind of search is going to throw a great deal of light on the whole problem of sanity and how to treat insanity. But I am sure that the investigator ho started this had no interest himself in the practical application of ›w you could cure insanity. He was just interested in that question.

MR. COMPTON: There have been some other practical applications, o, have there not, in the field of the social sciences? Sometimes we in

the physical sciences are apt to look with the same skepticism on that Tyler, as Bell looks skeptically on our physical sciences.

MR. TYLER: I suppose that the most outstanding illustrations of applied social science research have been in the fields of economics—the effort to understand depressions, business cycles; to see more clearly how you could control what otherwise is a relatively unstable economic situation. Then, too, there is the example of the development of psychological tests. I was greatly impressed by the fact that during the war it was possible to take millions of young men from all parts of the country, from all walks of life, and to find and to select those who could be trained quickly and efficiently for being airplane pilots or for bombardiers or for carrying on a whole range of activities in the army. That was possible largely through research in the psychology which enabled us to identify talents.

MR. BELL: Is there no limit to the things that the social scientist should explore? For instance, let us come to the touchy question of whether we should teach and explain communism.

MR. TYLER: People are concerned about communism at this time, and they wonder why universities should want to stress it. But if we are to live in this world, with all its complex international relations, we have to understand the people in various parts of the world. When we were children, we studied in geography something about the Chinese, where they lived, what their country was like. If we are to understand the Russians, or other people in various parts of the world, we not only need to know what their geographic situation is, we also need to know something about how they organize their industries, what their political organization is, what kinds of beliefs they hold. It is as important for us to know about every part of the world now as it was for our grandfathers to know about every part of these United States.

MR. COMPTON: I find that the citizens of my town continually tell me "Be sure you keep all the communists off your faculty." And the faculty sometimes come around to me and say, "We think you ought to have a communist on our faculty in order to get a fair balance of the thinking of our students."

What would you say to that?

MR. TYLER: If the purpose of the university, as I believe its purpose to

e, is to learn as much as it can objectively, carefully, about various spects of life, I do not believe that a communist is going to be a very ood member of the faculty to give us any objective picture of communism. It is very likely that we may want to study communists; we nay want to know more about them; we may want to work with them. But the idea that a communist's being a member of the faculty is thereby going to make him a better person to investigate communism, I think, s not true.

MR. COMPTON: Can you be sure that you are getting communism traight if you do not get it from somebody who is sympathetic to it?

MR. TYLER: I think that the way to analyze communism objectively is ikely to come from someone who has more perspective than the communist himself.

MR. BELL: I would like to put in a lawyer's point at this stage of the proceedings. It is a very poor lawyer who will go into a lawsuit or a negotiation without knowing all that he can about what the other fellow has. We ought, by the same token, as I see it, to know what communism s; why it appeals to people; why it makes them fanatics; and why it loes not fit our picture.

MR. TYLER: I think that you are right. As a parent, I suppose I hear more comments from other parents about their children—the fear that heir children will become communists. We ought to recognize that young people of college age are in the middle stage of adolescence and hat part of the job of adolescence is to achieve independence from the family and to be able eventually to be dependable adults.

Today we find that adolescents generally are trying to show their ndependence by being different from their parents. In our generation ve would come home and try to shock our fathers and mothers by some other method. Nowadays it might be by telling them about communism or some other new "ism" which may develop. But we ought to take that or granted; adolescent children in college will often take an extreme point of view partly to demonstrate that they are becoming independent f the family.

MR. COMPTON: As a scientist, I would have to say that the primary unction that the university has in examining a difficult problem of this kind is to try to understand it thoroughly and objectively. One of the

theories that I have about a communist on a faculty is that he does not even intend to examine the problem, so far as I can see, thoroughly and objectively. If I had a person who was an advocate of faith healing, I might not complain about having him around, but I would not put him into my medical school. In the same way, if I have a person who is devoted to a particular pattern of politics, of religion, of social point of view, I will make sure that he approaches his problem objectively and does not use propaganda. That is the type of answer which I have to give on this matter of communists on the faculty.

MR. BELL: Would a communist or a fellow-traveler be objectionable in your physics department?

MR. COMPTON: If he is competent in his physics, I would say we are employing him for physics. But that would not necessarily mean that he was competent in the field of communism and its social significance.

MR. TYLER: Does not the university always face the question of finding a person who can do the job he is expected to do in a particular area? We want a competent physicist; we first look to be sure that he is a competent physicist. Beyond that, what we expect of him is what we expect of any other good citizen. We do not expect him to disobey the laws; we do not inquire into his religious beliefs or other aspects which are irrelevant to the particular job for which we employ him.

MR. BELL: Before we go on to anything about the humanities, I would like to come back to one point which, again speaking for society, I would like to raise. If society is to finance research in fields which are not aimed immediately at a practical end, how do we decide in what field to do research? Who decides it? Who decides what is worth while paying for?

MR. COMPTON: You know, that reminds me of a conversation which I had just across from Mandel Hall here, beside the tennis court, during wartime. A general came to me and said, "Compton, you scientists haven't any discipline."

I said to him, "General, what do you mean by that?"

He said, "You don't know how to take orders and give orders."

I thought a moment and I said to him, "But, General, you see, a scientist isn't the kind of person to whom you can give orders, because you don't know what to tell a scientist to do. He's got to figure that out

or himself. A part of his task as a scientist is to find what the possibilities re, and then his discipline comes in making himself do what he sees is necessary to do because of the facts which he finds. There isn't anybody who can give him his orders."

So, in a university you are dealing with a group of people who are original thinkers. They are the ones who are exploring the boundaries of knowledge and seeing what the possibilities are, and you rely upon them to see what can best be done in their particular field. They have to win or lose by the success of their choices. It may be in industry, in organized research, where you have an organized group that a person must fit into his place. But in a university the primary function is for the research man himself to find what it is that he does; and he wins or loses his place in his university according to the success of his choice.

MR. BELL: But, Compton, particularly in your field, research is getting to be a terribly expensive game. Look at the cyclotron on this campus; look at the other expensive gadgets around the premises. Nobody but Uncle Sam could have afforded to bet two billion dollars on the atomic bomb. Perhaps nobody can finance research from here on out except Uncle Sam. Why do we not leave it all to him?

MR. COMPTON: I would point out this, in the nation at the present time, during the year 1947, according to a recent survey, there was a billion two hundred million dollars spent for research. About forty-five million of that was spent in the universities. That is about one part in twenty-five. That means that only a small part of the research is being supported in the universities. It is really tragic from the point of view of directing the way in which our thinking is going.

MR. BELL: But what can the universities do that Uncle Sam could not do just as well in government or that business could not do?

MR. COMPTON: The people who think for what that research is going to be good must decide what it is to be. Are they in the government? Are they in industry? Is it not in the universities where we have the place in which the research man is free to think about what the research is going to bring?

MR. BELL: Do the humanities perhaps have some bearing on the objectivity of the judgment as to what research should be done?

MR. COMPTON: I suppose that the reason that I went from the atomic

job at the end of the war into universities was because I was convinced that in the universities, in the education and training of the young men and women, lay the hope of answering the new problems into which we were thrown as we approached an atomic age. If you look at it from that point of view, it is certainly in the humanities that the answers are coming—the answers to the questions such as those which Tyler proposed: What are the people like in other parts of the world? How does our life affect them? How does their life affect us? What is the understanding of the people of the values we have before us? Those are things for which the world looks to us to get the answers.

MR. TYLER: You know, Marquand's recent novel, *The Point of No Return,* is an illustration of the great interest of the American public in the question of what is the value in life, anyway. What do we look for? The failure of natural science or social science, as science, to provide an answer to that question means a return to the humanities to try to find out more about what life can really mean—what happiness can be in terms of music and art and literature, in terms of nonmaterial values of human relations. Those are the kinds of questions which a university must help to answer as well as answering the questions in the social sciences and the natural sciences.

MR. COMPTON: Frankly, I think that the universities are failing right now on their primary job. We have been discussing here the task of research, and we have talked about research in the physical sciences, the biological sciences, the social sciences; and it is true that the universities have done a great job in giving us a remunerative living, in supplying us better help, in enabling us more efficiently to adjust to society. But the thing which we have not done is to give people goals, to give them directions, to enable them to understand the people around them so that their lives will be richer. I happen to think of the motto of your university here, Bell.

MR. BELL: Will you translate it?

MR. COMPTON: I will give my own translation. "We would want knowledge to grow that life shall enfold." That means that we are looking for people's lives to be enriched by an education. I wonder whether these hundreds of alumni out here in the audience can honestly say that their education has given them a better understanding, a richer life. That is, of course, what the university is trying to do.

MR. TYLER: Does that not mean that the universities have two additional jobs? One of them is to deal, as you say, with these aspects of life which are less tangible. But the other one, which is equally important, is to try to get some unity out of the various activities of all our scientists and scholars throughout the university. Unless we can get unity out of what otherwise appears to be chaos in the world around us, how can we expect to make much of life?

MR. COMPTON: I think that unity is one of the things for which we have to strive. That, really, is an essential part which must come into undergraduate education—the education where we have to enable our young men and women in our halls to understand what the problems are with which they are faced; to adjust these youths to the international situation which is now in front of them; to make them world citizens instead of citizens of a small community.

MR. BELL: You think that we can no longer live to ourselves educationally?

MR. COMPTON: I have in front of me a quotation from Raymond Fosdick. He has it this way: "Our children are guarded from diphtheria by what a Japanese and a German did. They are protected from smallpox by an Englishman's work. They are saved from rabies by a Frenchman. They are cured of pellagra through the research of an Austrian. From birth to death they are surrounded by an invisible host—the spirits of men who never thought in terms of flags or boundary lines and who never served a lesser loyalty than the welfare of mankind."

I think that that is an illustration of the kind of world into which science is bringing us. Education ought to adapt us to live comfortably in that kind of world.

MR. BELL: Are you treating education as something which merely gives us a pleasant life, or is it an equipment for life? Is it useful? As society, I want to know whether we are putting our money on the right horse.

MR. COMPTON: To me these are three aspects of education, and we must not forget that there are three essential aspects. The first is the understanding of life—the understanding of the world, and where you fit into it, and what the possibilities are, and so on. That is what we call "general" or "liberal" education. Then you have the inspiration to do

something about it, to pick your goal, and to become enthused and earnest to make that goal real. And, in the third place, you must equip yourself so that you can work effectively toward that goal, and that is your professional education.

You have to have all those aspects. As I said a moment ago, I think that the universities are failing in an essential part of their education. I think that they are doing a good job on the matter of professional training. I really think that we are doing an outstanding job there. On the matter of understanding the world, we are doing a pretty good job. But we are not calling to the attention of people what the goals of life are. That is a question which we have been ducking, frankly. We have been afraid to tackle it. And if the universities do not make an honest attempt to find what the purposes of life are, which is the essential task that we have, I very well do not know to whom we are going to go to find the answers.

MR. BELL: And do you think that we are failing in that?

MR. COMPTON: I do. I do not think that we are making as good an effort on that as the university did a generation ago.

MR. BELL: I will have to put that up to Tyler, too. As a representative of society, I am quite nervous.

MR. TYLER: The job ahead is certainly a great one. We must prepare a generation of youth to understand what America's task is in world affairs. Because it is such a great one, we may think that we are not doing as much as we did in past generations. But actually what evidence we have would indicate that our education is getting better. But it is not getting better as fast as the demands which are made upon it.

MR. COMPTON: As I have gone from research in the laboratory to take charge of the administration of the university, I have been impressed by the fact that a university is not primarily an institution for the advancement of science. The university is really society's antenna for feeling the dangers and opportunities which the world presents. It is a community of scholars whose duty it is to understand the world and find the answers to some of its problems. Some aspects of that we are doing; others we are not doing so well.

MR. TYLER: I would emphasize that we live in a world which is changing with terrible rapidity. The knowledge required for mankind to sur

vive in this increasingly complex society is so much greater than our present store of knowledge that we are desperately seeking enlightenment. We must learn how to obtain and utilize efficiently the natural resources of food, materials, and energy required to maintain a higher standard of living. We must learn better to identify human talent, to conserve and develop human resources. We must learn how to get more from life, to give life better meaning for all of us. To answer these questions requires investigation and study directed at all aspects of life.

Mr. Bell: As the official layman in this group, I should like to add a final word from my corner. These gentlemen have had too good manners to emphasize the point, for they are both representatives of privately supported institutions. We have been talking about what society is entitled to expect from universities. My question is: What are universities today entitled to expect from society? I believe that they are entitled to expect support, not only of the public institutions but of the private. Well as the public institutions have defended their independence, we must admit that they are in more danger of governmental domination than the private ones. We see examples from time to time—witness Huey Long in the University of Louisiana. One of the depressing things about Germany was the abject surrender of the German universities to the nazis. We then heard of a Nazi scientist, and a Nazi truth, just as we hear now of a Soviet scientist and a Soviet truth. We hear of a scientist who recants from the beliefs he has developed in a lifetime in favor of the party line—and, if you please, on genetics.

If we believe genuinely in freedom, we must keep alive and flourishing the privately supported institutions, and we must keep them free to do their work without governmental control or threat of governmental interference with free thought.

A SENSE OF THE FUTURE*

By J. BRONOWSKI

SEVENTY-FIVE years ago, if you had walked on a summer evening into the country just beyond Bromley in Kent, you might have come on a remarkable sight. In the greenhouse of one of the larger and uglier houses of the neighbourhood, a tall man in his sixties was stooping over potted plants. Beside him sat a younger man, just as absorbed; and the young man was playing the bassoon. This earnest pair were Charles Darwin and his son Frank; and they were making a scientific experiment. Darwin wanted to know exactly what tells an insect-eating plant like the common sundew to close its leaves when a fly settles on it. So he was going through the possible causes methodically one by one. Noise was not a likely cause; but it might just have worked; and Darwin was not the man to rule out anything. He had tried sand and water and bits of hard-boiled egg, and now he was trying Frank's bassoon. Darwin never did get to the bottom of what makes the sundew close. But he almost did and the next generation finished his work. He was well content with that. Darwin at sixty was a famous scientist who had changed our whole understanding of nature; yet he remained content to do tidy experiments that would bear fruit somewhere, sometime in the future.

This is the sense of the future I want to talk about, at first hand, as a scientist. I am distressed to see how many people today are afraid of the future and of science together. I believe that these fears are mistaken. They seem to me to misunderstand the methods of science; and spring from a gloom about what it has done, which has simply forgotten the facts. We sit under the shadow of the nine o'clock news, nursing our sense of doom, and we think ourselves worse off than our forefathers a hundred and fifty years ago, who were at war with Napoleon for a generation. But a hundred and fifty years ago, the working week was eighty hours for children. Cholera was more common in England than 'flu. The country could barely support ten million people, and not a million of them could read. You know how all this has been changed; and don't let anyone tell you that nothing has been gained but comfort. Think of the gain in life and health alone: a population which has just topped fifty millions, the infant death rate cut by eighty or ninety per cent., and the span of life enlarged by at least twenty-five years. The sewer and the fertiliser have done that: and the linotype and the X-ray tube and the

* From a British Broadcasting Corporation broadcast on the Home Service. Reprinted by permission from *The Listener*, June 3, 1948.

tatistician puzzling over inheritance. They have been real liberators. Every nachine has been a liberator. They have freed us from drudgery and disease nd ignorance and from the misery Hogarth painted that could forget itself nly in the stupor of drink.

We owe that miracle to science; and it is a miracle. But the scientists who ave worked it have been neither gods nor witch-doctors. They have been nen: men who had faith in the future; and they have used no magic. What hey have used is at bottom only Darwin's method; because that method is cience. Science is experiment; science is trying things. It is trying each pos- ible alternative in turn, intelligently and systematically; and throwing away what won't work, and accepting what will, no matter how it goes against our prejudices. And what works adds one more piece to the slow, laborious, but triumphant understanding of our world.

This is not a secret or a mysterious progress. If it sometimes seems so, that s just because the day-to-day work of science is so unspectacular. You hear nothing from the research worker for years, and then, suddenly, there is the result in the headlines: penicillin or the jet engine or nuclear fission. No one tells the layman about the years of experiment and failure. How is he to know what has not been done, or to guess the labour of what has? What is he to think but to marvel at the skill of science, and to fear its power?

I believe that both these feelings do equal harm: the feeling of marvel as much as the fear. Because they have this in common, that they both want to persuade the layman that there is nothing he can do for himself. Science is the new magic, they whisper; it is out of your hands; for good or ill, your salvation or your doom is the business of others.

That is why I have attacked the magic before the fear: because the marvel lies below the fear. In the minds of most people today, the fear is plainly uppermost. They are afraid of the future; and if you ask them why, they conveniently blame the atomic bomb. But the atomic bomb is only the scape- goat for our fears. We are not afraid of the future because of a bomb. We are afraid of bombs because we have no faith in the future. We no longer have faith in our ability, as individuals or as nations, to control our own future. That loss of confidence has not sprung overnight from the invention of a weapon. The atomic bomb has merely brought home to us, harshly, as a matter of life and death, what has long been growing: our failure to face, our refusal to face, as individuals and as nations, the place of science in our world.

There is the taproot of our fears. In our hearts, of course, we know that the future belongs to science; we do not deceive ourselves about that. But we do not want to have to think like scientists. We want to cling to the doctrines and prejudices which we imagine, quite wrongly, made the world snug fifty years ago. We do not care about the future; we just want that world to last

our time. Because we do not feel equal to the new ideas; we have been told that science is mysterious and difficult. And so we let the exciting new knowledge slip from us, a little further every day, and our confidence with it; and then, face to face with the sense of our helplessness, we pretend that it is all a conspiracy among nuclear physicists.

It is in our power to change that in our own generation. As nations, we can apply to affairs of state the realism of science: holding to what works and discarding what does not. As individuals, we can grasp the commonsense ideas of science. And there is the most important lesson we must learn: it is the ideas of science that are remaking the world, not its mechanical achievements. When we have learnt that, we will see the achievements too in their proper place. The atomic bomb is not a great achievement of science. But scientists made a great discovery: the fundamental discovery that we can tap atomic energy. That is an achievement not of bickering nations but of man. And we have the whole history of science to tell us that every fundamental discovery has in the end brought men more good than harm. I said "has, in the end" almost by habit: has, if we are willing to look forward. Every scientist looks forward; what else is research but to begin what others will finish and enjoy? And what other incentive can satisfy any of us but that sense of the future? Disaster threatens us only if we perpetuate the division between science and our own everyday living and thinking. Let no one tell you again that science is only for specialists; it is not. It is no different from history or good talk or reading a novel; some people do it better and some worse; some make a life's work of it; but it is within the reach of everybody. Science is as human as Darwin and his bassoon, and no harder to understand. Its values are the human values: honesty, tolerance, independence, commonsense, and singleness of mind. Its achievements are among the great achievements of man: the Greeks ranked Pythagoras with Homer. And it has made its way not secretly and not by authority but by sticking to the plain facts and only the facts—never mind who discovered them or who challenged them. Science listened equally to Newton and his friend Christopher Wren, to Darwin and his critic Samuel Butler: and listens today to every bright lad with an idea as patiently as to the professors. If you want to know what happens to science when it allows itself to be dominated by authority, political or scientific, let me take you to a field of which I have some special knowledge: German research during the war. We went into the war very much afraid of German science: it had once had a great reputation. Yet the Germans all through the war never took a fundamental step, whether in U-boat research, in radar bombing, or in nuclear physics. Why were they, the professional war-makers, outclassed by us? One example will tell you. About the time that we had our first atomic pile working, Himmler's director of

war research was sending an investigator to Denmark to discover—believe it or not—how the Vikings knitted. By one of those exquisite strokes of irony which dogged the Nazis, the name of this investigator—believe it or not—was Miss Piffl.

To listen to everyone; to silence no one; to honour and promote those who are right, these have given science its power in our world, and its humanity. Don't be deceived by those who say that science is narrow; a narrow, bigoted power is as brittle as Himmler's. Have you been told that science is dogmatic? There is not a field of science which has not been made over from top to bottom in the last fifty years. Science has filled our world because it has been tolerant and flexible and endlessly open to new ideas. In the best sense of that difficult word, science is a democratic method. That has been its strength: that and its confidence that nothing can be more important than what is true.

Does that seem to you after all a very ordinary tradition? Of course it is. It is the tradition for which Europe has hankered ever since the Renaissance: free enquiry and personal action. It is the climate of the arts as much as of science. England led the world in both, because from Elizabethan times she made that tradition of independence her actual way of living. That is why the Authorised Version of the Bible, and the first table of logarithms and Shakespeare's Folio, all came out in England within twelve years. It is our inheritance of freedom, which has liberated the mind with the body. The sense of the future and that tradition are one, if we are willing to unite them. The ideas of science are not special ideas; we can all get at the heart of them—that is, all of us who are willing to find Darwin's sundew more stirring than the Vikings. What we need is to stop shutting our minds to these ideas; to stop being afraid of them. We stand on the threshold of a great age of science; we are already over the threshold; it is for us to make that future our own.

The ROUND TABLE, *oldest educational program continuously on the air, is broadcast entirely without script, although participants meet in advance, prepare a topical outline, and exchange data and views. The opinion of each speaker is his own and in no way involves the responsibility of either the University of Chicago or the National Broadcasting Company. The supplementary information in this pamphlet has been developed by staff research and is not to be considered as representing the opinions of the* ROUND TABLE *speakers.*

What Do You Think?

1. Do you think that there is or should be any limit to what universities should investigate? To what they should teach? Should a university, for example, teach and explain communism? Should a university control the student's inquiries into communism or any other "ism"? Should a university investigate and make sure that there are no communists on its faculty? How do limitations upon free investigation and free teaching become dangerous for society in general? How should society meet the problem of the discovery of new ideas which disturb the status quo? In answering this question, consider several historical examples of how society has treated historical figures like Galileo, Pasteur, Darwin, when they discovered new knowledge of great importance but "irritating" to the societies in which they lived. Do you agree with Justice Brandeis in the doctrine that we should allow the advocacy of any belief *so long as* there is opportunity for reply and for reason?
2. Do you think that the need is especially great today for independent centers of critical thought? Why is free inquiry so important to the preservation of a free society? Is a university, in your opinion, serving society if it maintains itself as such a center?
3. What is the contribution of universities to research in the physical sciences? In the biological and medical sciences? What is the difference between applied and pure or basic research? Why is a university, according to the speakers, the only place which can really carry on basic research? What is the great usefulness of "useless" knowledge? Why is all technical and applied research dependent upon basic and theoretical investigation? What are some examples from recent history? If this is true for the physical and biological sciences, is it also not true for the social sciences? Why does social science investigation today seem more "irritating"?
4. Do you agree with the speakers that American universities have been deficient in education in the humanities? What is meant by "the humanities"? How can study of the humanities bring happiness and establish values and goals for society?
5. What does society have a right to expect from a university? Upon what criteria do you think a university justifies itself for support from society at large? What are the things it does which no other institution in society can perform? What is the difference between the role a university plays in a democracy and in a totalitarian society? If democracy bases its strength upon the individual and upon freedom, is not a democracy the only system which can afford free universities? Is a democracy not the only system able to welcome freedom and change?